

**Notice of Allowability**

Application No.

10/767,733

Examiner

MANSOUR M. SAID

Applicant(s)

ABE ET AL.

Art Unit

2629

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/30/04.
2. ☒ The allowed claim(s) is/are 1-36, and renumbered as 1-36.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 4/10/04, 4/6/04, 1/30/04, 4/6/04, 8/3/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
RICHARD HJERPESUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

## DETAILED ACTION

### *Allowable Subject Matter*

**1. Claims 1-36 are allowed.**

The following is an examiner's statement of reasons for allowance: Claims 1-36 are allowed since certain key features of the claimed invention are not taught or fairly suggested by prior art. **In claim 1**, “the modulator modulates the pulse width of the modulation signal in synchronization with the modulation clock, the modulation clock supplying circuit supplies the modulation clock which has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency, and the frequency deviation is so restricted that, if at least two pixels corresponding to two adjacent scanning wirings are displayed based on arbitrary same luminance data, a difference between a display luminance of one pixel in a specified period and a display luminance of the other pixel in the specified period is less than or equal to a tolerable value determined by the luminance data”. **In claim 2**, “the modulator modulates the pulse width of the modulation signal in synchronization with the modulation clock, the modulation clock supplying circuit supplies the modulation clock which has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency, and the frequency deviation is so restricted that, if an arbitrary pixel is displayed based on arbitrary same luminance data, a difference between a display luminance in a specified period obtained by the virtual source clock and a display luminance in the specified period obtained by the modulation clock is less than or equal to a tolerable value determined by the luminance data”. **In claim 3**, “the modulator modulates the pulse width of the modulation

signal in synchronization with the modulation clock, and the modulation clock supplying circuit supplies the modulation clock which has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency and includes a gradation converter for converting a gradation of the luminance data in order to compensate for changes in a display luminance level due to the frequency deviation". In claim 34, "generating a modulation clock which serves as a criterion for determining a pulse width of a modulation signal and has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency, the frequency deviation being so restricted that, if at least two pixels corresponding to two adjacent scanning wirings are displayed based on arbitrary same luminance data, a difference between a display luminance of one pixel in a specified period and a display luminance of the other pixel in the specified period is less than or equal to a tolerable value determined by the luminance data; generating a modulation signal by modulating at least a pulse width based on inputted luminance data in synchronization with the modulation clock". In claim 35, "generating a modulation clock which serves as a criterion for determining a pulse width of a modulation signal and has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency, the frequency deviation being so restricted that, if an arbitrary pixel is displayed based on arbitrary same luminance data, a difference between a display luminance in a specified period obtained by the virtual source clock and a display luminance in the specified period obtained by the modulation clock is less than or equal to a tolerable value determined by the luminance data; generating a modulation signal by modulating at least a pulse width based on inputted luminance data in synchronization with the modulation clock". In claim 36, "generating a modulation clock which serves as a criterion for determining

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a pulse width of a modulation signal and has a frequency deviation to spread harmonics spectrum as compared to a virtual source clock of a constant frequency; converting a gradation of luminance data in order to compensate for changes in a display luminance level due to the frequency deviation; generating a modulation signal by modulating at lease a pulse width based on inputted luminance data in synchronization with the modulation clock". The closest prior art Abe et al. (7,009,627 B2) teaches a compensation unit applies compensation processing to compensate for fluctuation of display luminance due to the influence of voltage drop caused by a resistance of the row wiring to the image data, and a luminance control unit controls display luminance of the display panel based upon luminance information of the image data, Hardin (5,631,920) teaches a spread spectrum modulator frequency modulated the clock pulses with specific profiles of frequency deviation versus the period of the profile, Puckette et al. (5,909,144) teaches a clock reference frequency is digitally derived from a base signal ... modulation spreads the electromagnetic energy of the system signal over a band that is a portion of the desired clock frequency, however, singularly or in combination with other prior art, fail to anticipate or render the above underlined limitations obvious.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Abe et al (6,985,141 B22) teaches a plurality of modulation wirings, comprising of supplying a scan selection signal to a scanning wiring selected out of the plural scanning wirings for each horizontal scanning period.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe whose telephone number is 571-272-7681.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: 571-273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window at the Randolph Building, 401, Dulany Street, Alexandria, VA 22314.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Mansour M. Said**

9/4/06



RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
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